

# Nomination Validation in Gas Networks under Uncertainty

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**Abstract:** For steady state, passive gas networks feasibility of gas flow is investigated. The flow model comprises Kirchhoff's first and second laws as well as pressure bounds at the network nodes. For balanced input-output profiles (nominations) their technological feasibility is verified (or falsified) using a new explicit criterion formulated via suitable inequalities in the nominations space. The criterion is used for efficiently calculating feasibility probabilities in case nominations follow multivariate Gaussian probability distributions, so that spherical-radial decomposition can be employed. The talk concludes with some illustrative preliminary computational results.

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